Title (en)

SHEATHED THERMOCOUPLE AND SHEATHED THERMOCOUPLE MANUFACTURING METHOD

Title (de)

UMMANTELTES THERMOELEMENT UND VERFAHREN ZUR HERSTELLUNG EINES UMMANTELTEN THERMOELEMENTES

Title (fr)

THERMOCOUPLE GAINÉ ET PROCÉDÉ DE FABRICATION DE THERMOCOUPLE GAINÉ

Publication

EP 3751246 A4 20201216 (EN)

Application

EP 19801464 A 20190801

Priority

- JP 2019078074 A 20190416
- JP 2019030118 W 20190801

Abstract (en)

[origin: EP3751246A1] A sheathed thermocouple includes thermocouple wires; a metal sheath accommodating the thermocouple wires; inorganic insulating material powder filled in an internal space of the metal sheath; a glass seal part tightly sealing an opening of the metal sheath while allowing the thermocouple wires to pass; compensation lead wires connected to the thermocouple wires; a metal sleeve having a cylindrical shape having a leading end part defining a connecting section connected with an outer peripheral surface of the metal sheath, and allowing a portion of the metal sheath closer to a proximal end than the connecting section, the thermocouple wires and the compensation lead wires to be in an internal space, the thermocouple wires and the compensation lead wires lying without contact between themselves; and a glass filler part made of a glass having a lower softening temperature than the glass seal part, and filling an internal space of the metal sleeve.

IPC 8 full level

G01K 7/02 (2006.01); **G01K 1/08** (2006.01); **G01K 7/06** (2006.01)

CPC (source: EP US)

G01K 1/08 (2013.01 - EP US); **G01K 7/06** (2013.01 - EP US)

Citation (search report)

- [AD] JP H11166867 A 19990622 - TOSHIBA CORP
- [A] US 6102565 A 20000815 - KITA HIDEKI [JP], et al
- [A] US 9711892 B2 20170718 - NISHIKAWA TAKETO [JP], et al
- See references of WO 2020213182A1

Cited by

US12072245B2; WO2023055640A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 3751246 A1 20201216; **EP 3751246 A4 20201216**; **EP 3751246 B1 20210324**; JP 2020176875 A 20201029; JP 6650170 B1 20200219; US 11293807 B2 20220405; US 2021333155 A1 20211028; WO 2020213182 A1 20201022

DOCDB simple family (application)

EP 19801464 A 20190801; JP 2019030118 W 20190801; JP 2019078074 A 20190416; US 201916617459 A 20190801